
Quiz 1 - DSC 10, Fall 2024

Full Name:

PID:

Quiz Time: ☐ 4PM ☐ 4:30PM ☐ 5PM ☐ 5:30PM ☐ 7PM

Instructions:

- This quiz consists of 6 questions. You have a total of 20 minutes to complete it.
 - Please write **clearly** in the provided answer boxes; we will not grade work that appears elsewhere. Completely fill in bubbles and square boxes; if we cannot tell which option(s) you selected, you may lose points.
 - ☐ A bubble means that you should only **select one choice**.
 - ☐ A square box means you should **select all that apply**.
 - If your answer is a string, make sure to put it in quotes. If your answer is a float, make sure to include a decimal point.
 - No aids are allowed (no notes, no calculators, and no computers).
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By signing below, you are agreeing that you will behave honestly and fairly during and after this quiz.

Signature:

Version A

Please do not open your quiz until instructed to do so.

Question 1

What does the following expression evaluate to? Write your answer **exactly** how the output would appear in Python.

`5 * (4 ** 3 - 40) / (2 * 8) ** .5 + 10 / 3 + 2 * (5 / 6 - 1 / 2)`

Question 2

Select all the answer choices below that correspond to valid assignment statements. For the selected choice(s) only, write the value of the variable in the box.

☐ `"seal" = abs(-7) + round(23.442, 1)`

☐ `whale = max(round(17.82), 5, -20)`

☐ `shark = abs(max(4, 3, min(10, 5.5, 11)), 100, 30)`

☐ `squid = "error" + "?" * 4`

Question 3

Suppose that `weights` is an array containing the weights, in kilograms, of several leopard sharks living in La Jolla Cove. Several leopard sharks represented in `weights` weigh more than 10 kilograms.

Suppose that we have imported a module called `sharkpy` by running the code `import sharkpy`. The `sharkpy` module includes a function `heavy` that takes as input an array of shark weights and returns a smaller array containing only the weights that are above 10 kilograms.

Using the `heavy` function and an array method of your choice, write an expression that evaluates to the weight, in kilograms, of the lightest leopard shark in `weights` that weighs more than 10 kilograms.

Question 4

Suppose we run the following code.

```
creatures = "crab, eel, clam"
oceans = "Pacific, Atlantic"
creatures = creatures.title()
oceans = oceans.upper()
creatures = creatures.replace("clam", "lobster")
```

What does the expression `creatures + ", " + oceans` evaluate to? Write your answer **exactly** how the output would appear in Python.

Question 5

Define `narwhal` and `jellyfish` as follows.

```
narwhal = np.arange(6, 12, 3)
jellyfish = np.arange(12, 6, -3)
```

- a) True or False: `narwhal.sum()` and `jellyfish.sum()` evaluate to the same value.
☐ True ☐ False
- b) True or False: `(narwhal+jellyfish)[0]` and `(narwhal+jellyfish)[1]` evaluate to the same value.
☐ True ☐ False

Question 6

The DataFrame `finding_nemo` contains information about characters in the movie *Finding Nemo*. Each row represents a character, and the columns include:

- "Name" (str): the unique name of the character (ex. "Nemo", "Dory")
- "Species" (str): the species of the character (ex. "clownfish", "blue tang")

There is one character in `finding_nemo` named "Bruce". Which of the following lines of code evaluates to Bruce's species?

- ☐ `finding_nemo.get("Species").loc["Bruce"]`
- ☐ `finding_nemo.get("Species").iloc["Bruce"]`
- ☐ `finding_nemo.get("Species").loc["Bruce"].iloc[0]`
- ☐ `finding_nemo.set_index("Name").get("Species").loc["Bruce"]`
- ☐ `finding_nemo.set_index("Name").get("Species").iloc["Bruce"]`
- ☐ `finding_nemo.set_index("Name").get("Species").loc["Bruce"].iloc[0]`

Reminders:

- **Write your PID** on the front page and on the top right corner of page 3.
- If your answer is a string, make sure to put it in **quotes**.
- If your answer is a float, make sure to include a **decimal point**.
- Stay in your seat until the quiz is over. No leaving early.